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BATS OF THE GENUS MICRONYCTERIS AND ITS SUBGENERA

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The bats of the genera *Micronycteris*, *Glyphonycteris*, and *Xenoctenes* were originally placed in the genus *Schizostoma* Gervais 1856. This name was preoccupied by *Schizostoma* Bronn 1835, a genus of Mollusca. *Micronycteris* Gray 1866 is the next available name. The genus *Glyphonycteris* was erected by Thomas in 1893 for three of the species and *Xenoctenes* by Miller in 1907 for one of the species.

The genera *Micronycteris* and *Glyphonycteris* were revised in 1906 by Dr. Knud Andersen (1906, pp. 50–65). His material totaled 59 specimens, and he examined all but three species (*M. microtis*, *M. hypoleuca*, and *G. brachyotis*). The genus *Glyphonycteris* is not represented in collections in the United States. A photograph of the type skull of *G. sylvestris* is reproduced here (fig. 49).

Specimens of bats closely related to these genera have recently been received from the Trinidad Zoological Expedition, 1947, of Chicago Natural History Museum; from Brother Nicéforo María of Bogotá, Colombia; and by loan from the American Museum of Natural History, New York.

When the characters of the three described genera and the characters of the three series of bats from Trinidad, Colombia, and Brazil are tabulated it may be seen that the differences consist of various combinations of characters rather than diagnostic characters that might be regarded as of generic importance. The relationship of these bats may be more clearly indicated by placing them all as subgenera of Micronycteris. This will combine the bats of the Subfamily Phyllostominae, in which the tail extends to the middle of the interfemoral membrane and the middle lower premolar (pm_3) is not reduced.

I wish to thank Dr. H. E. Anthony of the American Museum of Natural History, New York, for the loan of very helpful material and for permission to describe a new subgenus and species from the

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American Museum specimens. Thanks are due also to Brother Nicéforo María of the Instituto de La Salle, Bogotá, Colombia, for the gift of five specimens representing another new subgenus and species.

KEY TO SUBGENERA OF MICRONYCTERIS

EXTERNAL CHARACTERS

Ears connected by a high notched band. Third metacarpal shortest, fifth longest. Forearm 31–37.5 mm	Micronycteris
Ears connected by a low un-notched band. Third metacarpal shortest, fifth longest. Forearm 42.7-45 mm.	Xenoctenes
Ears not connected by a band. Fifth metacarpal shortest, third longest. Fourth metacarpal shortest, fifth longest.	Lampronycteris
Fourth metacarpal shortest, third longest. Ears rounded, nose leaf blunt, forearm 34.3 mm Ears concave, nose leaf pointed, forearm 35.8–38.6 mm	
CRANIAL CHARACTERS	100
Pm ³ large, about equal to Pm ⁴ . Total length of skull 17–20 mm. Total length of skull 22.6–24 mm.	
Pm ³ and Pm ⁴ reduced, low	
Pm³ and Pm [±] normal, outer upper incisors large, bifid	$\dots Lamprony cteris$
Pm [±] slightly recurved. Pm ² larger than Pm [±]	Glyphonycteris

Genus Micronycteris Gray

Schizostoma Gervais, 1856, Exped. Comte Castelnau, Zool. Mamm., p. 49 (preoccupied). Type S. minuta Gervais.

Micronycteris Gray, 1866, Proc. Zool. Soc. Lond., 1866, p. 113. Type M. megalotis Gray.

Dental formula:
$$\frac{-23.1 - -34567}{12 - 1 - 234567} = i \frac{2-2}{2-2} c \frac{1-1}{1-1} pm \frac{2-2}{3-3} m \frac{3-3}{3-3} = 34$$

Subgenus Micronycteris Gray

Characters.—Wing formula: third metacarpal shortest, fifth longest; second phalanx of third metacarpal about equal to first phalanx; second phalanx of fourth metacarpal equal to or shorter than first phalanx. Ears large, rounded in outline, connected by band across forehead. Skull with high brain case. Upper border of ascending ramus sloping. Teeth as described by Andersen (1906, p. 51) and Miller (1907, pp. 123–124).



Fig. 41. Micronycteris (Micronycteris) megalotis megalotis; Arara, Brazil. About \times 4 $^3\!\!/_4$.



Fig. 42. Micronycteris (Micronycteris) minuta; Livramento, Brazil. About \times 4¾.

Micronycteris (Micronycteris) megalotis megalotis Gray. Figure 41.

Phyllophora megalotis Gray, 1842, Ann. Mag. Nat. Hist., (1), 10, p. 257.

Micronycteris megalotis Gray, 1866, Proc. Zool. Soc. Lond., 1866, p. 113; Andersen, 1906, Ann. Mag. Nat. Hist., (7), 18, p. 54 (Bogotá specimens only).

Type locality.—Brazil.

Range.—West Indies (Trinidad and Tobago), Colombia, Venezuela, the Guianas, south to southern Peru and Brazil.

Characters.—Forearm 31.8–36.2 mm. Calcar longer than foot with claws. Upper parts brown, with bases of hairs white, under parts brown, with hairs unicolored to base. Connecting band between ears low on sides, rising to a triangle in center. Notch at apex of triangle. Lower premolar three not reduced.

Micronycteris (Micronycteris) megalotis mexicana Miller

Micronycteris megalotis mexicanus Miller, 1898, Proc. Acad. Nat. Sci. Phila., 50, p. 329.

Type locality.—Plantinar, Jalisco, Mexico.

Range.—Southern Mexico and Central America.

Characters.—Like megalotis but larger. Forearm 35.2-38 mm.

Micronycteris (Micronycteris) megalotis microtis Miller

Micronycteris megalotis microtis Miller, 1898, Proc. Acad. Nat. Sci. Phila., 50, p. 328,

Type locality.—Greytown, Nicaragua.

Range.—Recorded from Nicaragua and Panama.

Characters.—Smaller than megalotis (forearm 31–32), with much smaller ears.

Remarks.—Andersen (1906, p. 55) questioned the validity of this race, as he felt that the ears were shrivelled by the preservative. In recording specimens from Panama and the Canal Zone other authors have given no measurements of the ears.

Micronycteris (Micronycteris) minuta Gervais. Figure 42.

Schizostoma minutum Gervais, 1856, Exped. Comte Castelnau, Zool. Mamm., p. 50, pl. 7, fig. 1.

Micronycteris minuta Thomas, 1901, Ann. Mag. Nat. Hist., (7), 8, p. 191.

Micronycteris hypoleuca Allen, 1900, Bull. Amer. Mus. Nat. Hist., 13, p. 90—Bonda, Colombia.

Type locality.—Capella Nova, Brazil.

Range.—Brazil and Colombia (hypoleuca).

Characters.—About the size of megalotis (forearm 36–37.5 mm.). Color lighter than in megalotis, Prout's Brown above, bases of hairs white; below grayish white, slightly buffy on sides. In another phase the upper parts are near Hazel, the under parts lighter. Ears connected as in megalotis but center notch deep, dividing band into two triangles. Calcar shorter than foot. Lower premolar three reduced.

Remarks.—A specimen of *M. minuta* received in alcohol from Brother Nicéforo María, collected at Cúcuta, Colombia, agrees in color with material from Brazil. It is in the brown phase. The forearm measures 35.2 mm., and the condylo-basal length of the skull is 15.6 compared with 16.4 in Brazilian specimens. The teeth are smaller (upper tooth row 6.2, in Brazilian specimen 6.7), especially the lower premolars, the middle one being very low and crushed between the others. More specimens might make it possible to recognize *hypoleuca* as a subspecies of *minuta*.

Micronycteris (Micronycteris) schmidtorum Sanborn. Figure 43.

Micronycteris schmidtorum Sanborn, 1935, Field Mus. Nat. Hist., Zool. Ser., 20, p. 81.

Type locality.—Bobos, Izabal, Guatemala.

Range.—Known only from type locality and from Copan, Honduras.

Characters.—Size about as in megalotis (forearm 35.1–35.3 mm.). Band between ears intermediate in shape between megalotis and minuta. Upper parts Snuff Brown, or between Prout's Brown and Mummy Brown, the hairs with white bases. Below grayish white. Lower premolars large, pm_3 about three-quarters the size of pm_2 , and pm_4 about equal to pm_2 .

Subgenus Xenoctenes Miller

Xenoctenes Miller, 1907, Bull. U. S. Nat. Mus., 57, p. 124. Type Schizostoma hirsutum Peters, 1869, Monatsber. Akad. Wiss. Berlin, 1869, p. 397.

Characters.—Wing formula as in Micronycteris. Ears connected but band very low, not notched. Skull shaped about like that of Micronycteris, and teeth as in that genus except the incisors. Upper inner incisors widely apart at base, in contact near tip, with in-



Fig. 43. Micronycteris (Micronycteris) schmidtorum, type; Bobos, Guatemala. About \times 4 ½.



Fig. 44. Micronycteris (Xenoctenes) hirsuta; Trinidad, British West Indies. About \times 4.

distinct cingulum. Front face of tooth facing to the side instead of forward as in *Micronycteris*. Outer incisor small, wedged between inner and canine, its tip below cingulum of canine. Canines in contact posteriorly. Lower incisors long from base to crown, and wedged so tightly between canines that anterior-posterior length of crown of inner pair is greater than lateral length.

Micronycteris (Xenoctenes) hirsuta Peters. Figure 44.

Schizostoma hirsutum Peters, 1869, Monatsber. Akad. Wiss. Berlin, 1869, p. 397, 1869.

Micronycteris hirsuta Andersen, 1906, Ann. Mag. Nat. Hist., (7), 18, p. 57.

Xenoctenes hirsutus Miller, 1907, Bull. U. S. Nat. Mus., 57, p. 125.

Type locality.—Unknown.

Range.—Recorded from Costa Rica, Colombia, and Trinidad.

Characters.—Externally like Micronycteris but larger (forearm 42.7–45.4; greatest length of skull 22.6–24).

Subgenus Lampronycteris subgen. nov.

Characters.—Size medium, forearm 39.6–40 mm.; greatest length of skull 21.2–21.6 mm. Fifth metacarpal shortest, third longest. Second phalanx of third finger about one and one-quarter times the length of first phalanx. Second phalanx of fourth finger longer than first phalanx. Calcar shorter than foot with claws. Tail about half the length of membrane. Ears moderate, separate, outer margin of ear conch concave in upper half. Tragus almost straight on inner edge, thickened in upper half. Outer edge convex, serrated in lower half. Tip bluntly pointed. Nose leaf and lancet as in Micronycteris but lancet narrower and more pointed. Naked pad on lower lip with Y-shaped groove.

Skull characters.—Brain case low compared with that of Micronycteris or Xenoctenes. Rostrum and interorbital region swollen. Top of rostrum flattened, slightly concave. Basisphenoid pits shallow. End of presphenoid swollen, overhanging basisphenoid pits and hiding the foramen. Upper border of ascending ramus sloping. Teeth in general as in Glyphonycteris and Micronycteris. Upper inner incisors chisel-shaped; outer incisors bifid with elongated point (similar to Lonchorhina) in contact with inner tooth and sharply grooved by wear of lower canines. Canines widely spaced so upper incisors are not compressed. Lower premolar three reduced as in Micronycteris minuta. Upper premolars straight, not recurved as

in Glyphonycteris. Pm⁴ longer and narrower than in Micronycteris, its inner border straighter and internal ledge more horizontal, not raised in center. A small cusp at postero-internal corner. Orbital foramen over last premolar and first molar, while in the related subgenera it is over center of first molar.

Micronycteris (Lampronycteris) platyceps sp. nov. Figures 45, 46.

Type.—No. 61942 Chicago Natural History Museum, from Guanapo, Trinidad, British West Indies. Skin and skull. Adult female. Collected February 11, 1947, by Frank C. Wonder. Original number 1387.

Characters.—Those of the subgenus.

Color.—Back and sides close to Olive Brown the hairs with white bases. Darker on head, back of and between ears, where hair is thick and plush-like. Long hairs on throat close to Mars Yellow and face in front of ears suffused with same color. Chest and belly near Tawny-Olive.

Measurements.—Type (2 topotypes in parentheses): Total length 68 (70–70); tail 14 (13–14); hind foot 10 (11–11); ear 17 (15–16). Forearm 39.8 (39.6–40). Skull: greatest length 21.2 (21.3–21.6); condylo-basal length 18.6 (18.8–18.8); palatal length 9.6 (9.5–9.5); interorbital width 4.9 (5.2–5.2); zygomatic width 10.3 (10.4–10.6); mastoid width 9.6 (9.4–9.6); width of brain case 8.8 (8.7–8.8); upper tooth row 8 (8.2–8.2); width across canines 6.6 (6.7–6.8); width across molars 3.8 (3.9–4).

External measurements of four specimens in alcohol.—Tibia 17.4–18.5; foot 11.4–12; calcar 8.6–10.8. Forearm 38.9–41.1; third metacarpal 37–38.9, first phalanx 12.9–14.1, second phalanx 16.1–17.6, third phalanx 9.1–9.5; fourth metacarpal 35.9–37.9, first phalanx 9.5–9.9, second phalanx 10.3–10.9; fifth metacarpal 35.1–36.8, first phalanx 9.1–11.3, second phalanx 9.6–10.4. Nose leaf width 4.4–4.7, height of lancet 6.5–7.2.

Specimens examined.—Trinidad: Guanapo, type and six topotypes, 1 male, 6 females (4 alc.) (C.N.H.M.). Venezuela: Neveri Valley, southwest of Cumanacoa, 1 male (A.M.N.H.). Nicaragua: Volcan de Chinandega, 1 skull only (A.M.N.H.), an adult skull, associated with a very immature skin that is not definitely identifiable.

Remarks.—Lampronycteris has more distinguishing characters than the other subgenera. The wing formula, the length of second



Fig. 45. Micronycteris (Lampronycteris) platyceps, type; Guanapo, Trinidad. About \times 4½.

phalanx of third finger, the more developed upper outer incisors, the shape of Pm⁴, the flattened brain case, the swollen basisphenoid, and the position of the infraorbital foramen are not found in related subgenera. The elongated second phalanx of the fourth finger is shared by *Neonycteris* and *Glyphonycteris* as are the separate ears.



FIG. 46. Micronycteris (Lampronycteris) platyceps, type; Guanapo, Trinidad.

In the brighter color and reduced $pm_{\overline{3}}$, it shows a relationship to M. minuta and schmidtorum.

The specimens were collected from a hollow tree by local people, who brought them to Mr. Wonder while he was on the Trinidad Zoological Expedition of Chicago Natural History Museum.

Parasites.—Bat flies (Streblidae) Trichobius dugesii Townsend (not dugesii Jobling)=blandus Curran, and Speiseria ambigua Kessel. Mites: Spinturnicidae.

Subgenus Neonycteris subgen, nov.

Characters.—Size small, forearm 33.4–34.3 mm., greatest length of skull 17.9 mm., Ears rounded, separate. Fourth metacarpal



Fig. 47. Micronycteris (Neonycteris) pusilla, type; Tahuapunta, Brazil. About \times 4½.

shortest, third longest. Second phalanx of third finger one and one-third times the length of the first phalanx. Second phalanx of fourth finger about equal to first phalanx. Calcar shorter than foot with claws. The skull with the brain case less domed than in *Micronycteris* but more than in *Lampronycteris*. The upper border of ascending ramus is almost horizontal. Pm⁴ reduced, low, its tip much lower than tip of Pm²; pm₃ not reduced. Incisors and other teeth as in *Micronycteris*.

Micronycteris (Neonycteris) pusilla sp. nov. Figure 47.

Type.—No. 78830 American Museum of Natural History, from Tahuapunta, Rio Vaupes, at the Colombian border, Amazonas, Brazil. Adult male, skin in alcohol, skull removed and cleaned. Collected July 14, 1929, by the Olalla Brothers.

Characters.—Those of subgenus.

Color.—Specimen dried from alcohol. General color dark brown. Hairs of back long, light brown with dark tips. Under parts brown.

Measurements.—Forearm 34.3, tibia 13.7, calcar 7. Third metacarpal 31.3, first phalanx 10.8, second phalanx 14.9; fourth metacarpal 28.9, first phalanx 8.7, second phalanx 9.8; fifth metacarpal 29.9, first phalanx 8, second phalanx 8.2; width of nose leaf 3.9, height of lancet 7.5. Skull: greatest length 17.9; condylo-basal length 15.7; interorbital width 4.3; zygomatic width 8.9; mastoid width 7.9; width of brain case 7.6; upper tooth row 6.7; width across canines 3.1; width across molars 5.4.

Specimens examined.—Two, the type and one topotype.

Remarks.—The individual characters of this subgenus are its small size, wing formula, and very low Pm⁴. In the unconnected ears, length of second phalanx of third finger, horizontal upper border of ascending ramus, and shape of brain case it approaches Glyphonycteris. In other characters it is like Micronycteris.

Subgenus Trinycteris subgen. nov.

Characters.—Size medium (forearm 35.8–38.6); greatest length of skull 20.5. Fourth metacarpal shortest, third longest. Second phalanx of third metacarpal a little longer than first phalanx. Second phalanx of fourth metacarpal slightly longer than first phalanx. Calcar less than half the length of foot with claws. Nose leaf with narrow pointed tip. Ears separate, pointed, slightly concave on both margins below tip.



Fig. 48. Micronycteris (Trinycteris) nicefori, type; Cúcuta, Colombia. About \times $4\frac{1}{2}$.

Skull with rostrum elongated as in *Glyphonycteris sylvestris*. Pm³ and pm₃ low, reduced in size, almost flat, with small anterior cusp. Pm⁴ recurved as in *Glyphonycteris*. Upper outer incisors small, not filling space between canines and inner incisors. Lower incisors small, not crowded, faintly trifid.

Micronycteris (Trinycteris) nicefori sp. nov. Figure 48.

Type.—No. 64266 Chicago Natural History Museum, from Cúcuta, Colombia. Skin in alcohol, skull removed and cleaned. Adult male. Collected January, 1948, by Brother Nicéforo María. Original number 222.

Characters.—Those of the subgenus.

Color.—This series of five specimens preserved in alcohol shows a gray and a red phase. The type is near Olive Brown above with the hairs on the back almost uniform to the base. The hairs on the sides of the neck are lighter at the base. The under parts are lighter in color than the upper parts. The darkest specimen is near Walnut Brown above and is lighter below. The individual hairs on the back have dark tips, followed by a broad light band, and narrow dark bases. All specimens have a faint light gray line on the lower back.

Measurements.—Type (extremes of 4 paratypes in parentheses): Forearm 37.9 (35–38.6); third metacarpal 35.7 (33.9–34.8), first phalanx 13.5 (11.8–13.3), second phalanx 16.1 (15.3–16.4), third phalanx 8.1 (8.5–9.4); fourth metacarpal 34.3 (31.3–33), first phalanx 9.8 (8.7–9.6), second phalanx 11 (10.8–11.7); fifth metacarpal 34.6 (32.6–33.9), first phalanx 9.9 (8.9–9.6), second phalanx 8.6 (8.1–10). Tibia 17.6 (16.5–17.6); foot with claws 12 (12–12); calcar 4.7 (4.7–5.6); tail 9.6 (10.5–12). Ear from meatus 16 (16–17); nose leaf height 7.8 (7.5–9), width at base 4.5 (4.5–5). Skull (type): Greatest length 20.5; condylo-basal length 18.5; palatal length 8.2; interorbital width 4.3; width of rostrum 5.2; zygomatic width 9.6; mastoid width 8.9; width of brain case 8.2; upper tooth row 7.3; width across canines 3.3; width across last molars 6.2; lower tooth row 7.6.

Remarks.—Trinycteris approaches Glyphonycteris in the shape of the skull, especially the elongated rostrum, and in the recurving of Pm⁴. It differs from all other subgenera in the great reduction of the Pm³ and pm₃. Brother Nicéforo María writes concerning the habitat: "These bats were found in a tunnel, at some 50 meters from the entrance. The specimens of Lonchorhina aurita and Micronycteris

minuta also were captured in the same tunnel, that has been opened through the rock; a big waterpipe is now being placed in the same tunnel and will connect the waters of the Rio Zulia with an electric light plant."

Subgenus Glyphonycteris Thomas

Glyphonycteris Thomas, 1896, Ann. Mag. Nat. Hist., (6), 18, p. 301. Type G. sylvestris Thomas.

Characters.—Ears unconnected, margin concave in upper half. Fourth metacarpal the shortest, fifth the longest. Second phalanx of third finger one and one-third to one and one-half times the length of the first phalanx. Second phalanx of fourth finger longer than first phalanx. Skull with brain case domed, less than that of Micronycteris but more than that of Lampronycteris. Upper border of ascending ramus almost horizontal. Upper inner incisors chiselshaped. Pm⁴ with point slightly recurved. Lower incisors trifid.

Micronycteris (Glyphonycteris) sylvestris Thomas. Figure 49.

Glyphonycteris sylvestris Thomas, 1896, Ann. Mag. Nat. Hist., (6), 18, p. 302; Andersen, 1906, Ann. Mag. Nat. Hist., (7), 18, p. 59.

Type.—Adult male, skin and skull (Brit. Mus.).

Type locality.—Miravalles, Costa Rica.

Characters.—Forearm 40.5 mm. Calcar shorter than foot with claws. Greatest length of skull about 20 mm.

Color.—"Hairs of upper side with four alternating rings of dark brown and whitish; the extreme base, next to the skin, white; a broad ring of blackish brown; a broad ring of white or yellowish white; narrow tips of hairs approaching clove-brown. Fur of under side dark brown at base, greyish drab at tip." (From Andersen.)

Micronycteris (Glyphonycteris) behni Peters

Schizostoma Behni Peters, 1865, Monatsber. Akad. Wiss. Berlin, 1865, pp. 505–508.

Glyphonycteris Behni Andersen, 1906, Ann. Mag. Nat. Hist., (7), 18, p. 59.

Type.—Adult female in alcohol (Berlin Mus.).

Type locality.—Cuyabá, Matto Grosso, Brazil.

 ${\it Range.}$ —Recorded from type locality and Rio Cosnipata, Puno, Peru.

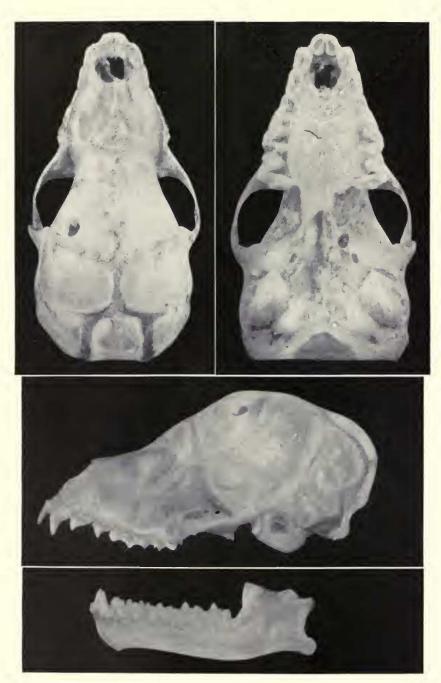


Fig. 49. Micronycteris (Glyphonycteris) sylvestris, type; Miravalles, Costa Rica. About \times 4½.

Characters.—Size large, forearm 45–47 mm. Calcar shorter than foot. In general like G. sylvestris but larger.

Micronycteris (Glyphonycteris) brachyotis Dobson

Schizostoma brachyotis Dobson, 1878, Proc. Zool. Soc. Lond., 1878, p. 880. Glyphonycteris brachyotis Andersen, 1906, Ann. Mag. Nat. Hist., (7), 18, p. 60.

Type.—Paris Museum.

Type locality.—Cayenne, French Guiana.

Range.—Known from one specimen from type locality.

Characters.—Apparently like sylvestris but calcar longer than foot. No redescription of this species has been published.

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